A DYNAMICAL INTERPRETATION OF THE GLOBAL CANONICAL HEIGHT ON AN ELLIPTIC CURVE

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Abstract. There is a well-understood connection between polynomials and certain simple algebraic dynamical systems. In this connection, the Mahler measure corresponds to the topological entropy, Kronecker's Theorem relates ergodicity to positivity of entropy, approximants to the Mahler measure are related to growth rates of periodic points, and Lehmer's problem is related to the existence of algebraic models for Bernoulli shifts. There are similar relationships for higher-dimensional algebraic dynamical systems.

We review this connection, and indicate a possible analogous connection between the global canonical height attached to points on elliptic curves and a possible 'elliptic' dynamical system.